FIRE SUPPRESSION AND EXPLOSION PROTECTION—ACCEPTABLE SUBJECT TO USE CONDITIONS: TOTAL FLOODING AGENTS—Continued

Application	Substitute	Decision	Conditions	Comments
	Inert Gas/Powdered Aerosol Blend.	Acceptable as a Halon 1301 substitute in normally unoccupied areas.	In areas where personnel could possibly be present, as in a cargo area, EPA requires that the employer shall provide a pre-discharge employee alarm capable of being perceived above ambient light or noise levels for alerting employees before system discharge. The pre-discharge alarm shall provide employees time to safely exit the discharge area prior to system discharge.	The manufacturer's SNAP application requested listing for use in unoccupied areas only. See additional comment 2.

Additional Comments
1—Must conform with OSHA 29 CFR 1910 Subpart L Section 1910.160 of the U.S. Code.
2—Per OSHA requirements, protective gear (SCBA) must be available in the event personnel must enter/reenter the area.
3—Discharge testing should be strictly limited only to that which is essential to meet safety or performance requirements.
4—The agent should be recovered from the fire protection system in conjunction with testing or servicing, and recycled for later use or destroyed.

FIRE SUPPRESSION AND EXPLOSION PROTECTION—ACCEPTABLE SUBJECT TO NARROWED USE LIMITS: TOTAL FLOODING AGENTS

Application	Substitute	Decision	Conditions	Comments
Halon 1301, Total Flooding Agents.	C_3F_8	Acceptable where other alternatives are not technically feasible due to performance or safety requirements:. a. due to their physical or chemical properties, or. b. where human exposure to the extinguishing agents may approach cardiosensitization levels or result in other unacceptable health effects under normal operating conditions.	Until OSHA establishes applicable workplace requirements:. For occupied areas from which personnel cannot be evacuated in one minute, use is permitted only up to concentrations not exceeding the cardiotoxicity NOAEL of 30%. Although no LOAEL has been established for this product, standard OSHA requirements apply, i.e. for occupied areas from which personnel can be evacuated or egress can occur between 30 and 60 seconds, use is permitted up to a concentration not exceeding the LOAEL. All personnel must be evacuated before concentration of C_3F_8 exceeds 30%. Design concentration must result in oxygen levels of at least 16%.	The comparative design concentration based on cup burner values is approximately 8.8%. Users must observe the limitations on PFC acceptability by making reasonable efforts to undertake the following measures: (i) conduct an evaluation of foreseeable conditions of end use; (ii) determine that human exposure to the other alternative extinguishing agents may approach or result in cardiosensitization or other unacceptable toxicity effects under normal operating conditions; and (iii) determine that the physical or chemical properties or other technical constraints of the other available agents preclude their use; Documentation of such measures must be available for review upon request. The principal environmental characteristic of concern for PFCs is that they have high GWPs and long atmospheric lifetimes. Actual contributions to global warming depend upon the quantities of PFCs emitted. For additional guidance regarding applications in which PFCs may be appropriate, users should consult the description of potential uses which is included in the March 18, 1994 Final Rulemaking (58 FR 13043).